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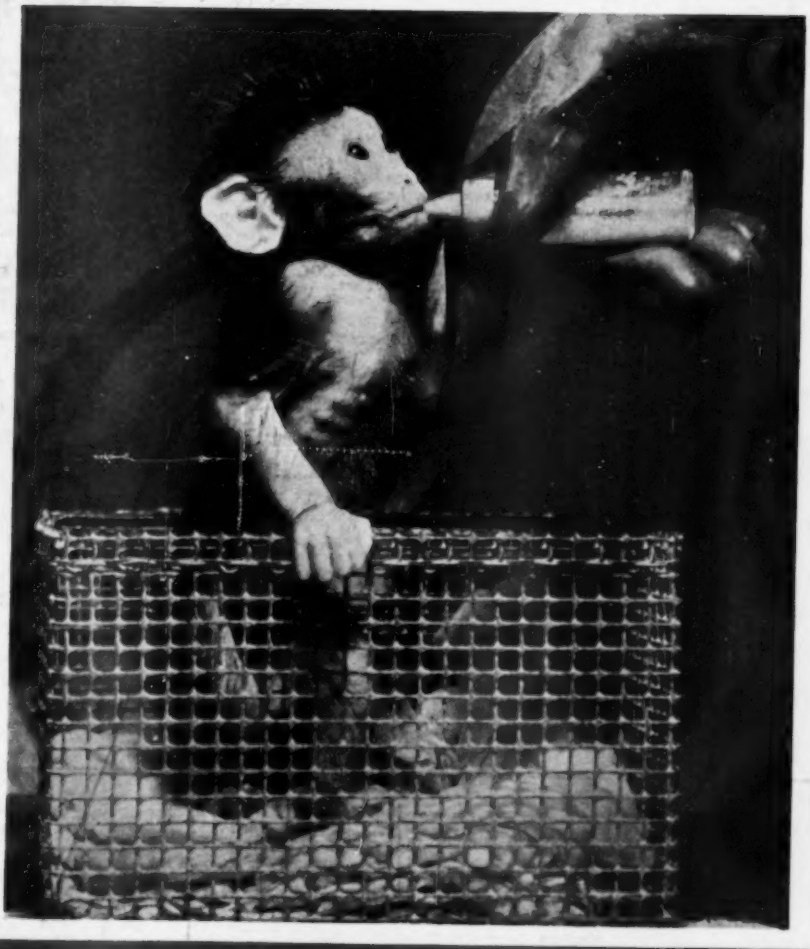
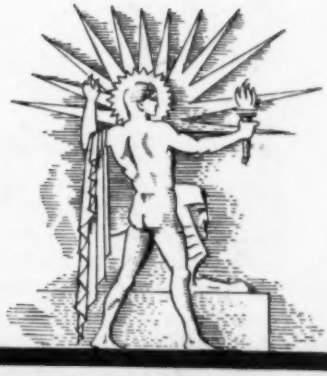
SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •





October 18, 1941

Germ Free

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A SCIENCE SERVICE PUBLICATION

Do You Know?

Women are much less liable to *bomb shock* than are men.

Igloos to the U. S. Army are storage warehouses for explosives.

Prior to World War One, Germany made three-fourths of the world's *dyes.*

More than 70,000 trained *research specialists* are employed by 2,300 companies in the United States.

Oils that yield *flower scent* are usually on the upper surface of petals or sepals, in the epidermal cells.

England was invaded this summer from the continent — by an unusual flight of clouded yellow *butterflies.*

Infra-red rays kill *cockroaches,* but no handy method of using this method in the home is foreseen, says one agriculturist.

A *fly swatting squad* is important to the British Army in the Western Desert, where a million flies were trapped and burned in six weeks.

Old *Indians* of Minnesota say that many fierce battles were fought in the past between Chippewas and Sioux for possession of wild rice beds.

The complex melting pot of peoples in the *Russian Caucasus* includes some descendants of medieval Crusaders who stayed there when on their way to Jerusalem.

QUESTIONS DISCUSSED IN THIS ISSUE

Most articles which appear in SCIENCE NEWS LETTER *are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.*

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Dust on Army trucks is found to increase *camouflage* effectiveness of the dull olive drab paint—shiny surfaces reflect light.

Both wheat and barley were grown in *India* about 3000 B.C., since these grains have been found in city ruins of that age.

Homing pigeons can carry for the Army larger loads than tissue paper notes around the bird's leg—photographs and documents can be attached at the breast.

The electric *refrigerator* of 1942 will have more than 50 plastic parts, and a survey indicates that more than 77 plastic applications are possible.

Japan is eating *artificial butter* made from oil in peanuts, cottonseed, coconuts, soybeans and fish, and is even trying rather smelly whale oil butter.

A scientific expedition has found conclusively that there are enough giant *king crabs* in Alaskan waters to support an American crab industry there.

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MEDICINE

Radio-Strontium Tested as Treatment for Bone Cancer

Radioactive Metal, Made in Atom-Smashing Cyclotron, Carried Directly to Affected Bones; Relieves Pain

PATIENTS hopelessly sick with cancer which has spread to the bones from its original location in the breast or prostate gland are now being treated with radio-strontium, made by the atom-smashing cyclotron, its inventor, Prof. E. O. Lawrence, of the University of California, announced at the Natural Science Symposium celebrating the 175th anniversary of Rutgers University.

It is too early to know what the results of this treatment will be, although favorable signs including control of pain have been observed.

The cyclotron attack on cancer and other serious diseases now includes use of neutron rays, made by bombarding a beryllium target with high speed deuterons, to treat cancer; use of radio-phosphorus for treatment of the blood diseases leukemia and polycythemia vera; and use of radio-iodine for treatment of tumors and enlargement of the thyroid gland.

The idea of using radio-strontium for treating bone cancer arose from studies of the late Dr. Charles Pecher at the University of California, who found through harmless tracer doses of radio-calcium and radio-strontium that strontium, like calcium, after it is taken into the body goes immediately to the bones, particularly to new-forming bone tissue and cancerous growths in bones, practically none of it being deposited elsewhere. Either strontium or calcium, therefore, could be used to carry cancer-killing radiation straight to cancerous bones. Radio-strontium is being used, because it can be made more easily in the cyclotron than can the radio-calcium.

The small, harmless tracer doses of radio-calcium and radio-strontium also are giving information about the action of vitamin D in rickets, Prof. Lawrence reported.

Vitamin D, these studies have shown, both promotes the absorption of calcium and in other ways promotes mineralization of bone.

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IN THE ARMY NOW

Originally intended for the airlines, this new 20-ton Curtiss transport plane has been taken over by the U. S. Army for use as a transport and cargo plane. It is said to be America's largest twin-engined airliner and was designed to carry 36 passengers, a crew of five, and 5,000 pounds of baggage at top speed of 3½ miles a minute.

ANTHROPOLOGY

Gestures Not Inherited—They Are Imitated

YOUR gestures with hand or head as you talk are not inherited from your dead ancestors—despite Nazi racial and political views that gestures are part of each human being's racial descent. Gestures are picked up from people around you, and living in a different land you might be a different person, so far as gesture mannerisms go, so Dr. David Efron of Sarah Lawrence College concludes in a scientific study of New Yorkers, Gesture and Environment. (*Reviewed, SNL, this issue.*)

Dr. Efron has analyzed gestures of two sample groups — southern Italians and eastern Jews in the city.

Each group, he learned, has distinct mannerisms which disappear as an individual becomes assimilated into American life. The more complete the assimilation, the fewer arm-sweeping Italian gestures or hand-waving Jewish gestures an individual will use. In fact, as Americanization advances, these types use fewer gestures. Like people with two languages, they may acquire hybrid gestures, part American and part foreign. They also take on Americanisms, which run to such mannerisms as emphatic fist movements and slicing.

To study these New Yorkers, Dr. Efron observed gestures in homes, restaurants, at race tracks, in summer resorts and schools.

The claim by "the high priests of political anthropology in the Third Reich" that the amount and manner of gesticulating of an individual are determined by racial descent is not upheld by scientific analytic study, Dr. Efron declares.

Stating that these authors have nothing to go on but vague impressions and a few "selected" photographs, Dr. Efron says emphatically:

"Their theories of 'race' are plagued with conceptual fictions that have no place in scientific reasoning."

Science News Letter, October 18, 1941

ENGINEERING—PSYCHOLOGY

"Crazy Drivers" on the Road May Be Literally Insane

May Have Grandiose Ideas, Thinking Themselves More Important Than Others, Be Suspicious or Even Faint

THE "CRAZY driver" who whizzes by you at 70 miles an hour may be insane—litera ly.

Probably the most vicious group of dangerous drivers on the highways are the mentally ill, Dr. Lowell S. Selling of the Psychopathic Clinic of Detroit's Recorder's Court, told the National Safety Congress meeting in Chicago.

"Even in cities where there are a number of highly developed psychiatric and mental hygiene clinics," he said, "are individuals who are suffering from mental diseases. Some of them have never been sent to a doctor and in many cases their own families do not know that they are insane.

"The average layman does not recognize symptoms of insanity unless the patient's behavior is extremely bizarre."

Some of the mentally ill have grandiose ideas. They think they are more important than other people and that they can pay for any amount of damage they might do to life or property with their cars. Some are nervous, unstable, and excitable so that in an emergency they "blow up" and do the wrong thing.

Sufferers from the mental disease dementia praecox, or schizophrenia, are likely to include the type of person with violent suspicions and false ideas that he is being persecuted by the police or mysterious organized groups. Such a person may interpret a gesture of a pedestrian as being a sign to some conspirator in a plot and deliberately run his car into the pedestrian to kill him in what is imagined to be "self protection."

In almost all mental disorders which are due to actual destruction of parts of the brain, the sufferer is likely to be bewildered or confused, Dr. Selling said. Such a person may have an accident because he really doesn't know what he is doing.

Cases of organic brain diseases, like epileptics, may lose consciousness at the wheel. And there are other types of persons subject to such spells of fainting, Dr. Selling pointed out. It may happen because of an overdose of sedatives or pain-relieving drug, syphilis of the brain, sleeping sickness, kidney disease or heart disease, or improper use of insulin.

The question of whether feebleminded persons should be permitted to drive is a difficult one, Dr. Selling said, and should be decided individually. There are very low grade individuals who obviously cannot drive a car, they can't read road signs, understand driving regulations, or even manipulate the controls of the car. But between these very low grade defectives and the normal in intelligence there are many dull persons about whom it is difficult to decide. If these persons have excellent attitudes toward the rights of others, if they are physiologically in good condition, if they can learn by rote the rules of the road, they may be safe drivers.

Science News Letter, October 18, 1941

Chained To Machines!

DEFENSE workers are being chained to power press machines by the wrist—but don't be shocked, because it's no galley slave hardship, but the latest in modern safety.

The Posson guard, name of the new wrist device, was described before the National Safety Congress by F. E. Frederick, director of safety for the International Business Machines Corporation. A pull cord attached to the machine prevents the worker from getting hand or arm under the punch, drill or shear when in a cutting position.

Yes—the operator can remove the pull cord from his wrist and walk off, any time.

Science News Letter, October 18, 1941

Dated Dynamite

DATED dynamite is now recommended by E. D. McNeil, Jr., of the Hercules Powder Company. Fresh explosives are highly important to safety and efficiency of mining operations, he said.

Safety measures in mines should include strong respect for lightning, he also pointed out. It is dangerous to handle explosives during electric storms even deep in the ground, as lightning may use the steel in the shaft to enter the mine.

Science News Letter, October 18, 1941

Predicting Safe Driving

TRUCK drivers who give other motorists the "bird" and take wild chances can be kept off the road by a new testing method reported by Prof. Amos E. Neyhart of Pennsylvania State College's Institute of Public Safety, who described the new test plan before the National Safety Congress.

"In these days of national tension and industrial speed-ups, it is more than ever important that the drivers put upon our highways be trained, normal, and responsible persons," Prof. Neyhart declared.

A truck driver applying for a company job, put through the new tests, must drive over a standard route long enough to show up bad driving habits. He must park, back, pull out, and stop quickly, while a checker "deducts" for every slip in judgment or skill or temper. But before the prospective truck driver gets a chance at the wheel, Prof. Neyhart explained, he is put through tests of traffic knowledge and psychological and physical tests. If he shows a faulty attitude or some limitation that cannot be overcome, he is disqualified, thus saving the company the expense of a driving test, and perhaps the greater expense and trouble of serious accidents on the road.

Weak spots in driving of old, experienced truck drivers for a company can also be detected by many of the techniques for selecting new drivers, the safety expert pointed out. By retraining some of these men, a company can reduce accident hazards, with their train of economic losses and injuries.

Science News Letter, October 18, 1941

AGRICULTURE

White Blackberries Found Wild In Florida

A LARGE wild colony of white blackberries has been discovered near Gainesville, Fla., by W. A. Murrell of the University of Florida, who plans to experiment with the wild berries in the hope of improving them for local use. White blackberries previously discovered have never been suited to Florida's climate.

Science News Letter, October 18, 1941

EPIDEMIOLOGY

Mosquitoes Are Incriminated As Sleeping Sickness Carriers

Evidence Indicates They May Carry Both Equine and St. Louis Types; Belong to Species Culex Tersalis

THE VIRUSES that cause two kinds of "sleeping sickness" have been discovered for the first time in mosquitoes collected in regions where the diseases were epidemic, Dr. William McD. Hammon, Dr. William C. Reeves, Dr. Bernard Brookman, and Dr. Ernest M. Izumi, of the University of California, and U. S. Department of Agriculture Entomologist C. M. Gjullin, stationed at Portland, Ore., report. (*Science*, Oct. 3.)

The evidence incriminating mosquitoes as carriers of both St. Louis and Western equine types of encephalitis, or sleeping sickness, is thereby increased, but the role of the mosquito as carrier of the disease has not yet been proved, Dr. Hammon and associates point out.

For proof that mosquitoes carry the disease, laboratory animals must get encephalitis after being bitten by mosquitoes that have previously bitten other animals known to have encephalitis. Experiments of this type are now in progress.

The mosquitoes now implicated belong to the species, *Culex tersalis,* which is widely distributed throughout the states west of the Mississippi River and is the most common mosquito in the Yakima Valley, Wash., where it feeds on man, horses, mules, cows and mallard ducks. Encephalitis cases have been occurring in both man and horses in this valley, and previous studies by Dr. Hammon and associates indicate that barnyard fowl, such as ducks, may be a reservoir of the encephalitis virus.

A practical and speedy diagnostic test for encephalitis proved its value during the epidemic just ending in Manitoba, Can., and central United States, Dr. J. Casals and Dr. R. Palacios, of the Rockefeller Institute, report in the same issue of *Science*.

This test is known to scientists as the complement-fixation test. Such tests on blood from patients in Manitoba and Colorado indicated that the epidemic was caused by the virus of horse encephalitis of the Western type.

Science News Letter, October 18, 1941

EXTINCT RHINOCEROS TRACK

This 40,000,000-year-old footprint of an extinct animal was collected by Robert G. Chaffee, assistant curator of paleontology of the Academy of Natural Sciences of Philadelphia.

SURGERY

Patient Survives Removal Of One Entire Lung

THE FIRST man who ever had an entire lung removed to get rid of a cancer is still alive and active in his profession of surgery eight years after the operation, Dr. William E. Adams, of the University of Chicago, told scientists gathered for the University's Fiftieth Anniversary Celebration.

During ordinary activities, Dr. Adams said, the surgeon-patient "is unaware of signs or symptoms of embarrassment referable to the cardio-respiratory (heart and breathing) system. Many examples of shorter duration show this to be the rule rather than the exception."

Science News Letter, October 18, 1941

PALEONTOLOGY

Find Rhinoceros Prints 40,000,000 Years Old

DISCOVERING the first footprints ever found of rhinoceroses that roamed the West 40,000,000 years ago, an expedition of the Philadelphia Academy of Natural Sciences has brought a choice footprint sample from the discovery site at Hat Creek Basin, Wyoming, to Philadelphia.

The sample, consisting of ancient mud hardened to sandstone, weighs 600 pounds, and it took four men half a day to get the stone block out. The block of sample prints was chosen from hundreds in the rocky ledge, which represents the edge of an old, old watering hole where Oligocene animals came to drink. America's 40,000,000-year-old rhinos were only half as big as modern kinds. Bones of the ancient animals were found nearby. Robert W. Chaffee, leader of the expedition, discovered the tracks.

Fifteen miles away, the expedition located a veritable zoological garden of early American animals. The skeletal remains include sabre-tooth tigers, tiny camels, giant pigs, prehistoric dogs, and rabbits. Teeth of the rare Artiodactyl, a deer-like animal heretofore known only by a single skull, were also discovered.

The expedition collected over two tons of fossil specimens for scientific study.

Science News Letter, October 18, 1941

MEDICINE

Defect of "Blue Babies" Corrected by Operation

ONE of nature's rare oversights which, occurring at birth, may result in a "blue baby" and in early death for one-third of the victims, has been successfully corrected by surgical operation in two cases at the University of California Medical School, it was announced.

The operations were carried out by the staff of thoracic (chest) surgery, headed by Dr. Harold Brunn and including Dr. Brodie Stephens and Dr. A. L. Brown.

The condition for which the operation is performed is technically termed patent ductus arteriosus. Before birth, the baby's blood is not pumped through its lungs but is shunted through a passage, or duct, between the pulmonary artery and the aorta, main artery leading from the heart. At birth this passage normally is closed automatically but in rare cases the duct does not close.

This mishap is not always immediately fatal and the child may grow to comparatively normal adulthood with only a heart murmur to indicate that he has this defect in blood circulation. Usually, however, the California physicians point out, the child develops slowly and shows signs of malnutrition. One-third of them die of endarteritis (inflammation of the innermost lining of an artery) before they are 35 years old.

The operation to correct the defect consists in opening the chest and tying a strong silk cord around the open duct, thus making the closing originally designed.

Science News Letter, October 18, 1941

PHYSIOLOGY

Skin Test, as for Hay Fever, Reveals Alcohol Capacity

BY USE of a skin test, your physician can now tell you just how much alcohol you can take before you begin to act tipsy.

The method is very similar to that used to find out just what pollen or other protein gives a particular hay fever victim his sneezes. But instead of ragweed pollen, the physician injects a solution of 95 per cent ethyl alcohol. This brings up on the skin a wheal, something like that familiar to the sufferer with hives. Everyone gets this—it is not significant.

The thing that counts is the extent of the redness that surrounds the central wheal. If there is no redness, you have maximum tolerance. But if there is marked redness, you'd better go slow. You are beyond your limit when you have had two tablespoons of hard liquor. You still can drink, however, without running into difficulties, provided you stay within your limit.

This skin test for allergy to alcohol was described three years ago to the Association for the Study of Allergy by Dr. John M. Nagle, of Agnew, Calif. At that time, his colleagues warned that further confirmation of his results was needed before the test was put into general use.

The method has now been put to use at the New York State Psychiatric Institute by Dr. Douglas M. Kelley and Dr. S. E. Barrera in a research program for testing the effects of alcohol on personality. In this experiment it was necessary to be sure that each individual tested was in exactly the same state of intoxication. This meant a different dose of alcohol for different persons, and the amount was determined by Dr. Nagle's skin test.

It worked. After their drink all had a feeling of warmth and well-being, felt a thickening in the head without dizziness. They had practically no physical symptoms, but were conscious of having had a drink. In other words, they were mentally affected by the alcohol but were not too drunk to cooperate in the experiment.

Science News Letter, October 18, 1941

● RADIO

Thursday, October 23, 3:45 p.m., EST

On "Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. William J. Robbins, Chairman of the Board of Directors of the National Science Fund will discuss some of the rewards and results of fundamental scientific research.

Listen in each Thursday.

Monday, October 27, 9:30 p.m., EST

Science Clubs of America program over WRUL, Boston, on 6.04 and 11.73 megacycles.

One in a series of regular periods over this short wave station to serve science clubs, particularly in high schools, throughout the Americas. Have your science group listen in at this time.

NUTRITION

Square Meal Rule Aids Planning Meals in Wartime

YOU COOK some peas, beans or lentils; press them through a collander or sieve; mix with chopped parsley or watercress; moisten with a few drops of a strongly flavored sauce or catsup; cut in hunks to eat with crackers, or spread on bread or serve on hot toast. This gives a fair nutritional substitute for cheese and as such is one of the items suggested to English housewives in a book which has just reached this country, Food Values in Wartime, by Violet G. Plimmer. (*Reviewed, SNL, this issue.*)

American housewives, fortunately, do not have to search for substitutes for cheese, itself a substitute for milk. Nor do they need to struggle with the "discouraging business" of removing the seeds and hairs from rose hips in order to make a savory paste which when eaten fresh supplies vitamin C, consoling themselves with the thought that "a small amount of rose hips is equal to four times its weight of orange."

Many of them, however, are faced with the difficult problem of planning nourishing meals from limited food rations imposed not by war but by financial adversity. As Miss Plimmer points out, their only hope of success lies in knowing food values, so that nourishing substitutes can be found for foods that are not available. Her square meal plan is easy to learn and easy to follow. The square meal is made from foods in four groups: Bread, Butter, Flesh and Salad.

Bread includes flour, cereals, nuts, legumes, potatoes, bananas and root vegetables and dried fruits.

Butter includes all kinds of fat.

Flesh includes meat, poultry, fish, eggs, cheese and milk.

Salad includes fresh or canned fruits and vegetables, especially citrus fruits, berries and green leaves.

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PUBLIC HEALTH

Predicts Starvation Dropsy Will Soon be Widespread

Will Soon Spread in Europe If Not Already Prevalent; Occurs Frequently Among the Poor in United States

STARVATION dropsy, also called famine edema, war edema and hunger swelling, will soon be widespread on the continent of Europe if it is not already prevalent in the occupied regions, Dr. Rupert E. Arnell, of Louisiana State University School of Medicine, predicted at the meeting of the Central Association of Obstetricians and Gynecologists in New Orleans.

Hunger swelling can also occur in the absence of famine, often in the midst of plenty. It is so frequent among the poorer classes in the United States, Dr. Arnell declared, that many workers in the field regard it as a real public health problem.

Expectant mothers frequently have the watery swelling known as edema. Heart disease, kidney disease and the toxemias of pregnancy can cause it. Recent investigations have shown that deficiency of protein food such as meat in the diet can play an important, sometimes the chief, part in producing the swelling.

With Dr. William F. Guerriero, Dr. Arnell investigated the diet and nutritional state of 100 consecutive pregnant women admitted to the prenatal clinics of Charity Hospital in New Orleans. Protein deficiencies "nothing short of startling" were discovered. The highest protein intake was considerably less than the optimum for expectant mothers. The average was less than half the optimum intake and more than two-thirds of these expectant mothers were getting much less than the safe minimum.

When these women were treated by replacement of the missing proteins, by better diet and by transfusions of whole blood and plasma, they all promptly improved. The swelling or dropsy disappeared and the women lost weight enormously, due to excretion by the kidneys of the retained water.

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SUPERCHARGERS

These oxygen boosters for Uncle Sam's fighting airplanes are being turned out by General Electric by hundreds each week. They feed extra oxygen into carburetors, maintaining sea level atmospheric pressure at altitudes of five miles or more, and allowing the motor to deliver full power at 25,000 feet instead of being cut from 1,000 horsepower to less than 400.

ENGINEERING

Mechanical Brains May Do Future Auto Gear Shifting

AUTOMOBILE gear shifting may some day just happen when required under the direction of a "brain" of steel and wire. The autoist will merely have to make the momentous decision as to whether he wants to go forwards or backwards—and then just step on the gas.

Present trends are all in this direction. So says Harold E. Churchill, Studebaker engineer, in a report to the Society of Automotive Engineers. He traces the history of how one function after another that had to be executed by the driver has been taken over by automatic devices, from cranking the engine, advancing and retarding the spark (remember?), to the present day fluid drive.

But even this last great improvement still requires the driver to change the gear ratio to what, according to his judgment, it should be under the circumstances. The shift is merely gradual and continuous instead of by sudden jumps.

Mr. Churchill instead has in mind a mechanism by which the gear ratio will be automatically changed without the attention of the driver, according as the speed and pull (torque) of the engine require it. He has it more than in his mind, for such mechanisms have already been constructed and tested in actual use. His report deals with these tests. He is not altogether satisfied with them.

He points out a few defects. For instance, he says that the frequent automatic shifting of the gears in traffic is apt to be disconcerting to the driver. Something must be done about this. He recommends other improvements.

However, the mechanism in the main is here and only needs the removal of kinks, as disclosed by actual use, to become regular equipment of future cars.

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POPULATION

England Has More Brides, But Fewer Babies

ENGLAND is having more brides, but fewer babies, according to available figures which statisticians here have been studying to see effects of total war on population.

England had the highest marriage rate in its history last year, says a statistician of the Metropolitan Life Insurance Company. The marriage rate was nearly 30% above pre-war level. The birth rate this year is continuing a downward trend, but the decline that was slight last year is now a sharp drop. In the first six months of 1941 the birth rate in England's cities fell off 20% compared with 1940.

Infant mortality this year is high in England, because communicable diseases have been prevalent. Measles was abnormally prevalent in the first half of 1941 and whooping cough, also. Diphtheria cases were increasing to a lesser extent. These conditions have improved considerably during the summer, however, aside from the whooping cough situation.

Civilian air raid deaths for all England in the first eight months of 1941 total 19,078. Deaths from bombing during all of August were 169, or less than the daily average during April and May.

Science News Letter, October 18, 1941

PHYSICS

Electron Microscope Used To Study Surfaces

BULKY materials that "blind" the powerful electron microscope can have their surfaces studied by a new technic reported to the American Academy of Arts and Sciences by Dr. V. K. Zworykin, associate director of the RCA research laboratories, Camden, N. J., in his address acknowledging the award of the prized Rumford medals for 1941.

The method consists in making thin film replicas of the surfaces and studying them under the super-microscope which makes it possible to see details and objects 20 to 50 times smaller than those which can be resolved with a light microscope.

Dr. Zworykin also reported that biological specimens are being studied by drying them by freezing quickly and then cutting thin sections which can be penetrated by the electrons.

Higher voltages applied to the electron microscope are also making possible the study of materials of all sorts that have heretofore been opaque to the electrons.

Dr. Zworykin was given the Rumford award because of his researches upon photocells and their application, television and the electron microscope. The early American scientist, Benjamin Thomson, then Count Rumford of Bavaria, in 1796 sent $5,000 to John Adams, president of the American Academy of Arts and Sciences at that time, with the request that its income be used to award periodically a gold and a silver medal to outstanding research workers in heat and light. Robert Hare, inventor of the oxyhydrogen blowpipe, was the first recipient in 1839 and Dr. Zworykin is the 42d scientist so honored.

Science News Letter, October 18, 1941

ZOOLOGY

Museum Rates Rodents Most Successful Mammals

PRONOUNCING rodents the most successful group of mammals on earth—except for their rather insignificant size—the Field Museum of Natural History is opening a special exhibit of rats, squirrels, and other members of the rodent family tree, past and present.

Rodents have invaded all large land masses of the earth, are by far the most numerous animals of mammal kind in individual numbers, and have adapted to life in trees, on the ground, in underground burrows, and in semi-aquatic surroundings, says Paul O. McGrew, museum staff paleontologist. So-called flying squirrels are even semi-aerial. No other order of mammals can match this variety of habitats, says Mr. McGrew.

Featured in the exhibit, because until recently little was known about the geological history of rodents, is the skull of a 7,000,000-year-old resident of the West, distinguished by very big horns on its rodent nose.

Science News Letter, October 18, 1941

RADIO

U. S. Needs Scientists Trained in Radio, Sound

UNCLE SAM is on the search for scientists who have had at least a four-year college course including major courses in physics, especially radio and sound. The Civil Service Commission has just announced that it will receive applications for $2,000 per year positions for junior physicists. Candidates will not have to take a written examination, but will be rated on education and experience.

Science News Letter, October 18, 1941

IN SCIENCE

MEDICINE

Difficult, Rare Operation Removes Bronchial Tumor

A SEVERE malady of which young women are the principal victims has been successfully controlled by a rare and difficult operation pioneered by thoracic surgeons in the University of California Medical School.

This affliction, bronchial andemona, is caused by a tumor in one of the large bronchi, air passages which lead from the windpipe to the lungs. The condition is often mistaken for tuberculosis or cancer, and attacks young people mostly, 77% of the cases reported being under 40 years of age, and 64% of them women.

The California doctors report that twenty of these operations have been performed, every one of them successful, restoring patients to an active, normal life.

They believe the operation could be generally undertaken in such cases with a low mortality expectancy.

Science News Letter, October 18, 1941

PUBLIC HEALTH

88 Nursing Schools To Get $1,200,000

NAMES of 88 schools of nursing selected by the U. S. Public Health Service to receive Federal aid totaling $1,200,000, were announced by Surgeon General Thomas Parran.

The money will be used to train additional nurses to meet the shortage created by increased demands of the armed services and defense industries. Besides an increase in enrollment of student nurses, the program includes refresher courses, post-graduate study and field courses in public health nursing for graduate nurses.

Surgeon General Parran has estimated a need for 50,000 student nurses this year, and the Federal program will bring the total to about 42,000. The average yearly enrollment is slightly under 40,000. It is hoped schools able to increase their enrollment without Federal aid will meet the deficiency.

Science News Letter, October 18, 1941

E FIELDS

GENERAL SCIENCE

Nine Leading Scientists To Administer Awards

NAMES of nine eminent research scientists who will have charge of nine Fellowships of the 1942-43 Series of Lalor Research Awards have been announced.

Each scientist will nominate one scientific applicant for a year of research and will act as administrator for that Fellowship. The awards carry $2,000, and are open to men and women residents of the United States and Canada, who have a Ph.D. degree or its equivalent. In charge of applications is C. Lalor Burdick, The Lalor Foundation, Wilmington, Del., who will receive applications until December 31, 1941.

The scientific administrators for the year are: Dr. Edward A. Doisy of St. Louis University School of Medicine, Dr. Harold C. Urey of Columbia University, Dr. H. B. Vickery of Connecticut Agricultural Experiment Station, Dr. Detlev W. Bronk of the University of Pennsylvania, Dr. E. J. Cohn of Harvard Medical School, Dr. A. Baird Hastings of Harvard Medical School, Dr. Roger J. Williams of the University of Texas, Dr. Carl S. Marvel of the University of Illinois, Dr. W. F. Glauque of the University of California.

Science News Letter, October 18, 1941

ECONOMICS

Family Auto Gets Most of Family Dough

THE FAMILY auto gets the family dough. That isn't the way Government statisticians put it, but their latest figures on how Americans get around show that the average farm, village, or small-city family of good income now spends more on automobile transportation than on any other item except food and housing.

The wisecrack that an American would rather give up his home than his car is still a bit of an exaggeration, but the investigation reveals that families are willing to give up other things to make a place for the important automobile.

Nine families in ten in American cities and towns of all sizes own a car, if they have an income above $2,500, the survey shows. Farm families have become so automobile-minded that relatively more such families own cars than families living in villages and small towns.

Leading items in American family budgets in villages and small cities used to be food, housing, household operation, and clothing. Now, the family in good circumstances tends to spend as much or more on the car than on clothing—if the family lives in a village or small city.

Automobile ownership increases with ability to pay, but the used car market has extended car ownership, especially at lower income levels. While used cars are more commonly bought by low income families, in families as high as the $3,000 to $4,000 income class one-third of farm autoists drive used cars, and one-fourth to one-fifth of the village and small-city drivers are used car owners.

The survey, intended to provide comprehensive facts about the income and consumption habits of American families, was made by the U. S. Department of Agriculture in cooperation with the WPA, and results just compiled form a Government booklet, "Family Expenditures for Automobile and Other Transportation."

Science News Letter, October 18, 1941

CHEMISTRY

One of Earth's Rarest Elements Detected In Sun

POSSIBLE existence in the atmosphere of the sun of thulium has been obtained by Dr. Arthur S. King, working in the Astrophysical Laboratory of the Mt. Wilson Observatory. Thulium is one of the rarest elements known on earth.

Light from a small sample of the chemical was examined in the electric furnace where the temperature is about the same as that in the atmosphere of a cool star. Nine radiations emitted by thulium were found to check with unidentified radiations from the sun.

Dr. King stated that positive identification could not be announced until additional study has been made of the thulium atom.

Thulium has an atomic weight of 169.4, an atomic number of 69, and its chemical symbol is Tm. It was discovered by Per T. Cleve, a Swedish chemist, in 1879.

Science News Letter, October 18, 1941

PSYCHOLOGY

Rats and Cats Show Altruism and Cooperation

CATS CAN cooperate and cats behave altruistically with animals of their own kind, psychologists have learned in two researches, carried on independently.

A difficult job of cooperation was required of rats in an experiment by Dr. William J. Daniel of the University of North Carolina. One of a pair had to run to a platform while the other fed. Unless one rat had his weight on the platform, both rats would receive a mild electric shock and neither could feed.

In order for both to feed and avoid shock, the rats learned to take turns on the platform. They would change positions about 75 times a day and 90 per cent of the shifts were made without shock.

You might expect a cat fight when two cats do the work of pushing levers and receive as a reward just one piece of food between them. But Dr. Charles Nelson Winslow, of Brooklyn College, reports that he found they more frequently share the food peacefully.

He found personality difference between the cats he studied. Some would fight to get to the string by which they could pull in food or would battle for the food pulled in by another cat, but other cats would stand aside and let their companions get the food without interference.

Science News Letter, October 18, 1941

PHYSIOLOGY

Body "Gets Used" To Oxygen Lack

WHEN man flies or climbs too high altitudes his body "gets used" to the lack of oxygen in the upper atmosphere by a complex mechanism which keeps the blood from becoming too alkaline. The mechanism was explained by Major David B. Dill, U. S. Army Air Corps, at the meeting of the American Association for the Advancement of Science.

Lack of oxygen in the arterial blood stimulates the carotid body, a nerve center near the carotid artery in the neck. This speeds up breathing, which raises the oxygen content of the blood. The resulting rise in alkalinity would ordinarily depress the brain's breathing center. But a buffering action by body proteins absorbs the alkalinity and keeps the blood chemical balance normal.

Science News Letter, October 18, 1941

BIOLOGY

Germ Free Monkey

Infant Simian, Most Remarkable in the World, Romps In Her Small Cage, Untroubled By Even Harmless Germs

By DR. FRANK THONE

See Front Cover

A BABY monkey romps in a rather small cage in the bacteriology laboratory at the University of Notre Dame, and peeps through a round window at one end with big, wondering eyes.

In her way, this infant simian is the most remarkable little monkey in the world. There is not, and never has been, a germ of any sort in her active little body. Germ-free she came into the world, and thanks to most elaborate scientific precautions, germ-free she remains.

Scientists will watch her career with keenest interest. Normally all animals, from worms to whales, live and die with their insides swarming with bacteria and other one-celled plant and animal life. That goes for the human animal, too. We seldom stop to think of it (as well, perhaps, that we don't), but everyone of us is a perambulating combination zoo and botanic garden. So normal is it for animals to be inhabited by germs (usually harmless varieties) that it has even been contended that these micro-populations are necessary to life.

Elaborate Technique

Prof. James A. Reyniers, director of the bacteriology laboratories at Notre Dame, wasn't so sure about that. Being of an intensely inventive turn of mind, he built some elaborate mechanisms wherein it was possible to bring animals into the world untainted by any germs, and keep them germ-free afterwards.

He started out modestly, with small animals, down near the lower end of evolution's ladder: mice, rats, guinea pigs, rabbits, chickens. Long, patient experimentation proved that germ-free life was possible to animals. Through years of practice, his technique was made as nearly unerring as is humanly possible.

Finally he was ready to try his method on a larger and more difficult animal, zoologically much closer to the human stock. Most convenient and easiest to obtain, of all the monkey tribe, is the rhesus monkey, familiar to everyone as the hand-organ virtuoso's constant companion. Rhesus monkeys are imported in large numbers from India, for research purposes. So Prof. Reyniers bought a number of monkeys of this species.

Caesarian Birth

He selected a young female, pregnant with her first offspring. After elaborate skin cleansing and sterilization, he performed a caesarian operation—duplicate in miniature of the procedure in thousands of difficult human childbirth cases.

There was one decided difference, however. The operation was not performed in a typical hospital theater, but in a sterile closed chamber, so arranged that the scientists themselves were outside it, reaching in to do their work with their arms encased in long rubber gloves.

Babies of all mammalian species are normally free from germs during their entire prenatal existence within the womb. They get their first germs with their first milk, with their first breath. Delivered by caesarian operation and kept in a closed chamber, with germ-free food, germ-free water and germ-free air, they should remain germ-free themselves so long as the seal against the outer world remains unbroken.

That is what Prof. Reyniers did for his guinea pigs and other small animals, and that is what he has done for the little germ-free monkey. All supplies are sterilized and introduced through germ-excluding air locks. Air is filtered free of all micro-life. When the little monkey is to be weighed or fed, hands are thrust into the long gloves gasketed into the sides of the solid-sided cylinder that is her rearing cage. This is the nearest she comes to contact with the outside world.

The mother monkey, incidentally, recovered nicely from her operation and has been restored to the laboratory's monkey colony. Prof. Reyniers hopes that she will eventually provide him with another germ-free infant.

The little monkey, meanwhile, has become quite a favorite with the laboratory staff. They have named her "Yehudi II," quite disregarding her sex.

Little Yehudi II receives a diet very similar to that given to human babies. Her formula consists of canned milk, water and dextri-maltose every two hours. This is supplemented with Pablum once daily, and the necessary vitamins. Daily she gains weight between a fifth and a quarter of an ounce.

"At present," Prof. Reyniers reports, "she is fast becoming a laboratory worry, since her curiosity is so acute that she gets into all sorts of unpredictable adventures. We have found it necessary to hide all feeding equipment, and since the space in the cage is rather limited, I am wondering how long we can keep her out of mischief. She has a most provoking habit of unscrewing anything that she can turn with her little fingers.

Favorite Perch on Balance

"She roams wobbly-legged all over the cage, and several days ago she got herself tangled in one of the gloves and nearly smothered. Her favorite perch is on the balance, which gives her a gentle up-and-down ride. Several weeks ago she cut her biting teeth, and she exhibits dislikes for certain foods, such as spinach."

Prof. Reyniers also states his reasons for undertaking to raise a germ-free monkey baby: "The first reason for this experiment with the monkey is its resemblance to the human. Since our studies are concerned with the relationship of bacterial flora to the development of animals, and since we have perfected our techniques and experiments on rats, mice, rabbits, guinea pigs and chickens,

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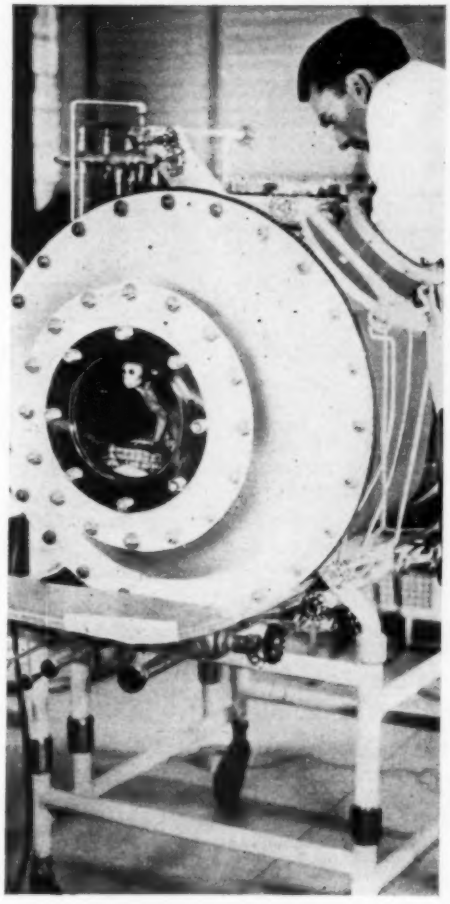

GERM-FREE CAGE

***Little Yehudi II peeps from her sanitary surroundings as the attendant waits on her from outside. How she is fed without contact with a germ-ridden world is shown in the illustration on the front cover of this week's* Science News Letter.**

the monkey is the logical next step. Since there is very little literature on monkeys, we want to raise this monkey for experience and records for future use in the laboratories.

"We also expect to extend our experiments to the dog, as a representative carnivorous animal."

Science News Letter, October 18, 1941

India is to have two *museums* for exhibits of scientific and industrial research, at Calcutta and Delhi.

As far back as 1934, says one economist, Germany began shifting *food habits,* gradually decreasing consumption of bread, meats, fats, milk, and fruit and increasing other food such as potatoes, with a view to meeting wartime food problems.

METALLURGY

Steel Famine Even In Defense Seen for the Next Few Years

This Year's Production of 90,000,000 Tons Will Be 8,000,000 Short; Shortage Next Year 27,000,000 Tons

A SHORTAGE of steel even for defense needs in 1941 and for the next few years is foreseen by Dr. Matthew A. Hunter, professor of metallurgy at Rensselaer Polytechnic Institute in Troy.

Even our scrap iron bin is practically empty, he declared. For years we sent large quantities of our scrap iron to a belligerent eastern nation. Now we have reason to regret this action.

This year, he continued, speaking on the General Electric Science Forum, the steel industry will produce about 90,000,000 tons of steel. But this is 8,000,000 tons short of our requirements.

Next year the shortage will be 27,000,000 tons.

By the construction of new plants, the steel industry expects to increase its capacity by 10,000,000 tons. But this still leaves a shortage of 17,000,000 tons which can only be made up by civilian conservation.

Already the Office of Production Management has indicated that a 50% cut in automobile manufacture in 1942 will be necessary in order to save some 4,500,000 tons for defense. Further restrictions will be necessary but cannot entirely make up the deficiency.

However, the situation is not altogether hopeless, Dr. Hunter thinks. He points out that some 14,000,000 tons of aluminum utensils have been contributed by American householders. He believes that every American household could contribute 20 pounds of scrap iron. They can do with fewer refrigerators, washing machines, ranges, and other articles containing iron.

Also there are untapped sources of scrap iron. He pointed to the automobile graveyards that dot the countryside. Iron fences, grills, and other useless structures can be removed. There is no substitute for steel, he said.

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CHEMISTRY

Mottled Enamel of Teeth Prevented by Water Treatment

FLUORIDES, cause of the disfiguring "mottled enamel" of teeth, can be removed from the drinking water by two simple methods designed for use in homes or small institutions having their own water supplies. The methods were devised and patented (numbers 2,207,725 and 2,257,111) by Dr. Elias Elvove, chemist of the U. S. Public Health Service, who assigned his patent rights to the United States Government.

How many American children have the ugly, irremovable brown spots on their teeth, result of drinking water and eating food cooked in water containing fluorides during the tooth calcification ages, is not definitely known. The condition, also called "black tooth," according to one estimate, afflicts 5,000,000 people in 31 states.

Community water supplies can be freed of fluorides by a relatively cheap method now commercially available.

The latest method for individual home

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EDITED BY I. BERNARD COHEN

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or small institution use patented by Dr. Elvove is to shake up two gallons of water with half a pound of tricalcium phosphate, finely powdered, for half an hour; or for shorter periods totaling half an hour. The mixture is then allowed to settle and is filtered through a suitable filter. Ordinary commercial tricalcium phosphate is suitable.

Magnesium oxide is used instead of the tricalcium phosphate in the earlier method devised by Dr. Elvove. This has the advantage, he points out, of also sterilizing the water and of being cheaper. Chief disadvantage is that it makes the water more alkaline, though this can be counteracted by adding a suitable amount of acid. For home use, vinegar might be used, he suggests.

Anyone planning to remove the fluorides from his home water supply, should, Dr. Elvove warns, seek the advice of the health department chemist in order to be sure of carrying out the procedure correctly.

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ASTRONOMY

Star Two Million Miles Away From Its Two Companions

26 Draconis May Take a Few Million Years To Make This Trip; Most Distant Companion of This Type

EVIDENCE that nature repeats itself, and that the laws of universal gravitation apply everywhere, was presented in papers before the American Astronomical Society.

In one case, a star is found which may take a few million years to revolve around its companions, and which is two million miles from them. Dr. Peter van de Kamp, director of Sproul Observatory, Swarthmore, Pa., and Dr. Dorrit Hoffleit, on leave from Harvard Observatory, determined that this stellar system, known as number 26 in the constellation Draco, the Dragon, is remarkably similar to that of Alpha Centauri, the nearest star, which is really composed of three stars. In Centauri group two stars are comparatively close together, each about as large and bright as the sun, while the other, called Proxima Centauri, is 10,000 times as far away from the first pair as the earth is from the sun. In the case of 26 Draconis, however, the third star is about 25,000 times as far from the first pair as the earth is from the sun, making it the most distant companion of this type known. In the other new star group, reported by Dr. George Van Biesbroeck, of Yerkes Observatory, there is a pair of stars which revolve around each other in only 13 years, and at an average distance apart of only half a million miles, or about as far as Jupiter is from the sun.

Twenty-six Draconis has long been known as a close double star, of which each component is very similar in mass to the sun. The distant faint body, of the tenth magnitude, was discovered to be connected with 26 Draconis by Dr. Adriaan van Maanen, Mt. Wilson Observatory, and C. H. Gingrich, Goodsell Observatory, in 1921, even though it is 738 seconds of arc (12 minutes of arc, or one-fifth of a degree) distant.

Thirty-five plates taken at Sproul Observatory since 1913 were measured and reduced. The magnitude of the bright binary was cut down by means of a rotating sector, to approximate equality with the faint companion. The distance of 26 Draconis from the earth was found to be about 30 light years, whereas that of Alpha Centauri, and its companion Proxima Centauri, is 4¼ light years. Dr. van de Kamp was careful to state that many uncertainties in the measurements existed, and that these results are only of a provisional nature, but that they show the star 26 Draconis deserves special attention on the part of other astronomers.

Proxima Centauri is estimated to take about a million years to revolve around its primary stars; the tremendous distance of the companion of 26 Draconis indicates that a few million years elapse while it completes a circuit around the two central stars. This is the longest period indicated for any gravitational system known. The period of the close pair is about 80 years, the same as for Alpha Centauri.

Science News Letter, October 18, 1941

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Of SCIENCE NEWS LETTER published weekly at Washington, D. C., for Oct. 1, 1941.

Washington
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ss.

Before me, a Notary Public in and for the District of Columbia aforesaid, personally appeared Alvin C. Stewart, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the SCIENCE NEWS LETTER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

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Alvin C. Stewart,
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Sworn to and subscribed before me this 10th day of October, 1941.

[SEAL]

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MASKED MEN

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BIOLOGY

NATURE RAMBLINGS
by Frank Thone

Defeating Winter

LIVING things use a wide variety of means in defeating or evading the deadly blight of winter!

Plants, in general, have the hardest time of it. Lower forms, being mostly aquatic, keep refuge in the water, as fish do, and stolidly stick it out. Water seldom freezes all the way to the bottom. Some of these pond inhabitants, at that, produce resistant spores in autumn, that fall to the bottom and lie dormant until spring.

Higher plants either trust the fate of coming generation to their seed and submit to being frozen to death, as the annual herbs do, or crouch beneath coverings of dead leaves and drifted snow, or even retreat into bulbs, rootstocks, etc., leaving no parts exposed above the surface. Trees, shrubs and woody vines either shed their leaves and stand as skeletons through the bitter season, or cling stubbornly to close-reefed evergreen foliage, and wrestle it out with the storms.

Animals, being motile for the most part, have a wider choice. Some, like short-lived insects, entrust the fate of the species to eggs or pupae, as annual plants do to seeds, and make no attempt to live through the winter. Others, notably birds, frankly run away, migrating southward in vast flocks as winter moves down the map, to return north with spring.

Many hibernate; and there are all degrees of hibernation. Some, like ground squirrels and frogs, pass into a "death-seeming swoon," from which it is extremely difficult to arouse them without warming them up to springtime temperature. Others, like bears and some species of squirrels, sleep deeply or lightly, as particular environmental conditions dictate. Some bears go into their dens in autumn and are not seen again until spring. Others emerge during thaws and forage for a little extra food to supplement their stored fat. In the South, of course, bears do not hibernate at all.

Many animals, like hawks and owls, chickadees and nuthatches, the fox, wolf and weasel tribes, rabbits and quite a number of rodents, are able to find enough food to keep their life-fires going full blast all winter, especially since the majority of them are able to make or find warm shelter of some kind.

Science News Letter, October 18, 1941

MEDICINE—GENETICS

Tendency To Die of Heart Disease Runs in Families

WEAK HEARTS are inherited; or, to put it another way, a constitution less resistant to the causes, whatever they may be, of heart and blood vessel diseases is inherited. Statistical evidence for this is reported by Dr. Antonio Ciocco, of the U. S. National Institute of Health and the Johns Hopkins School of Hygiene and Public Health. (*Human Biology*)

Studying death certificates, family histories and life insurance records of 2,309 white men, Dr. Ciocco discovered that "death from cardiovascular (heart and blood vessel) diseases was more frequent among the fathers and mothers of men who died from cardiovascular diseases than among the parents of men who died from other causes."

Seeking an explanation for this, Dr. Ciocco ruled out contagion, which would play a role only in the case of rheumatic heart disease, and living conditions on the ground that at the time the men applied for life insurance policies both parents were dead and the men themselves had reached adulthood in presumably good health.

"It appears more probable, therefore," he states, "that here is exemplified a manifestation of the hereditary transmission of an organ weakness, that is, a constitution less resistant to whatever immediate factors cause cardiovascular diseases."

The findings do not necessarily mean, Dr. Ciocco warns, that the way to prevent heart and blood vessel disease is by selective breeding. Rather, he hopes, the findings will lead to a realization that a family history of heart and blood vessel disease in an otherwise healthy person is "a forecasting sign indicating the probable need for special care and observation."

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Novel Things for Better Living

Autoists loading into the car and into the trunk space all that Wifey and Junior think is absolutely necessary for the trip, only to find that there is then no room for the passengers, will appreciate the "built-in folding trailer" recently patented. It is a sort of extension to the trunk compartment that slides out and lets down a wheel to support its rear end. Then either the baby or the baggage can ride in the trailer.

Underinflated tires usually go undiscovered until you drive up to a filling station or reach your destination. This situation is remedied by a "deflation indicator" recently patented. The device attaches to the hub of the wheel and is operated by the tire pressure itself. When the pressure sinks to a predetermined amount, a switch is closed and a visual or audible signal is given the driver.

The comfort of reading in bed will be increased by a cool fluorescent lamp now available. The lamp is molded of ivory or walnut bakelite for a single 15-inch, 14-watt tube. It has two felt-lined spring clamps for attachment and will be found useful also for illuminating mirrors, pictures, and bulletin boards.

Cotton picked wet can now be dried and cleaned before it goes to the gin by means of machines developed by the Department of Agriculture. Previously southern farmers lost heavily on their crops if rain wet or splashed dirt on the cotton bolls. Now they can ignore Old Man Weather.

A collapsible valise that can be converted into a flat package a couple of inches thick when not in use and thus stored in small space on the shelf, has lately won a patent. It is all done with zippers. The valise is made in one piece and folded up like a carton. In place of the usual paste and paper, the edges are held together by zippers.

You can eat your pretzel, and have a doughnut, too, if you patronize the products of a device recently patented by a Pacific Coast inventor. It is a doughnut cutter that punches out the succulent fried-cakes with three holes, and generally shaped so that they look like fat pretzels.

This highway marker can stripe a highway at the rate of 15 miles per hour. It can make one, two or three lines at the same time, in one or two colors, solid or intermittent lines in any combination. The truck carries

tanks and a compressor for feeding the markers. The latter consist of atomizing spray guns provided with side shields which assure clean-cut lines.

To keep the pilot warm, though the temperature sink to 60 below, an electrically heated flying suit is now worn. The outer shell is of wool and the wires are sewn on the inside of this shell. The lining of cotton permits radiation of heat to the body. Electrically warmed boots are also used. The suit is said to be many pounds lighter than the sheep-skin-lined garments they replace.

If you want sources of further information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, *1719 N St. N. W., Washington, D. C., and ask for Gadget Bulletin 75.*

Science News Letter, October 18, 1941

SCIENCE CLUBS OF AMERICA

Sponsored by Science Service

NEWS OF CLUBS

Elizabeth R. Norton, chairman of the science department and sponsor of the Alpha Astronomy Club of Emerson Junior High School, Flint, Mich. writes:

"Naturally, we wish to renew our membership. The help and guidance received from your organization is a spur to our club and its activities. This year my Science Department is organizing three more clubs: Geology, Biology and Weather Forecasting. In addition, a Camera Club is being formed. All of these wish to become affiliated with Science Clubs of America because we have found that affiliation with a national group has been an inspiration. Our Astronomy Club has met three times this fall and is giving public demonstrations."

This indicates the advantages of becoming affiliated with an international movement. The service of these quintuple clubs extends not only to the students but also to the community.

The Edgewood Science Club of Edgewood Junior High School, Hollidays Cove, W. Va., has just been organized under the sponsorship of C. A. Garrison, science teacher.

Bernice Varvil, sponsor of the Advanced Science Club of the Harrisburg Junior High School, Harrisburg, Ill. would like to exchange insect exhibits and other items with a club in some Latin American country.

Clubs are invited to become affiliated with SCA for a nominal $2 for 20 members or less. You can become an associate of SCA for 25 cents, which includes a copy of the 128-page Science Handbook for 1942. Address: Science Clubs of America, 1719 N St., N.W., Washington, D. C.

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•First Glances at New Books

AERONAUTICS

FLYING FLEETS, A Graphic History of U. S. Naval Aviation—S. Paul Johnston *Duell, Sloan and Pearce,* 188 p., illus., $3. The story of the development of the Navy's air arm is here told in pictures, with words of explanation, from its beginning 30 years ago down to the present time. Aircraft and accessories of all types are illustrated, including balloons, dirigibles, parachutes and parachuters, the autogyro, airplane carriers and catapults.

Science News Letter, October 18, 1941

AERONAUTICS

AIRCRAFT INSTRUMENTS—George Ellis Irvin—*McGraw-Hill,* 506 p., illus., $5. The innumerable instruments that are used on or in connection with an airplane are here described and illustrated in minute detail. Their manner of operation and use are explained, and instructions for installing, handling, testing and repairing are given. It is a manual for students, pilots, inspectors and repair men.

Science News Letter, October 18, 1941

NUTRITION

FOOD VALUES IN WARTIME—Violet G. Plimmer—*Longmans, Green,* 80 p., 40c. See page 246.

Science News Letter, October 18, 1941

AERONAUTICS

AVIATION FROM SHOP TO SKY—John J. Floherty—*Lippincott,* 215 p., illus., $2. Everything is told in this book about the making of airplanes and their engines from the blueprint to the finished ship in the sky. Included is an account of the men who design, make, test and fly them, of their training and experiences and of the many crafts employed. The book is illustrated with many fine photographs taken by the author.

Science News Letter, October 18, 1941

ANTHROPOLOGY

CULTURE ELEMENT DISTRIBUTION: XV SALT, DOGS, TOBACCO—A. L. Kroeber—*Univ. of Calif. Press,* 20 p., illus., 25c., (Anthropological Records Vol. 6, No. 1). A study of three specific subjects among 279 groups of Indians west of the Rockies.

Science News Letter, October 18, 1941

GEOGRAPHY

INDIANA, A Guide to the Hoosier State —Work Projects Administration Writers' Program, Indiana — *Oxford Univ. Press,* 548 p., illus., $2.75. Follows the plan of other volumes in the now well-known American Guide Series. That means that it contains much information about Indiana's background from prehistoric archaeology to present industries and arts, and that it provides guidebook information about leading cities, and ends with 20 motor tours around the State.

Science News Letter, October 18, 1941

GEOGRAPHY

MESA VERDE NATIONAL PARK — *Mesa Verde Company, Mesa Verde National Park, Colorado,* illus., 60c. A photograph album of about 15 sizable pictures of one of the most famous and remarkable of the Indian cliff-dwelling communities.

Science News Letter, October 18, 1941

GEOGRAPHY

ICELAND, The Island in the Limelight —Amédée Astraudo; Gaston Benedict, trans.—*American Herald Pub. Co.,* 47 p., illus., $1. Compactly gives the reader a quick survey of Iceland's industries, climate, literature, social conditions, and other points of interest.

Science News Letter, October 18, 1941

ARCHAEOLOGY

CLASSIFICATION AND DESCRIPTION OF INDIAN STONE ARTIFACTS—E. B. Renaud —*Colorado Archaeological Society: Copies available from author, University of Denver,* 36 p., 50c. A pocket reference booklet for student use, containing drawings and basic information regarding types of Indian artifacts and methods of their production.

Science News Letter, October 18, 1941

MEDICINE—SOCIOLOGY

SOCIETY AND MEDICAL PROGRESS — Bernhard J. Stern — *Princeton Univ. Press,* 264 p., $3. In order to give a better understanding of the present dilemma which the author says now faces medicine in America, he has traced the history of medicine side by side with the social and economic history of mankind, showing how each has affected the other.

Science News Letter, October 18, 1941

MEDICINE

FATAL PARTNERS, War and Disease—Ralph H. Major — *Doubleday, Doran,* 342 p., $3.50. A timely and interesting book with a final chapter on medical aspects of the first year of the present war.

Science News Letter, October 18, 1941

ELECTRICITY

BENJAMIN FRANKLIN'S EXPERIMENTS, A New Edition of Franklin's Experiments and Observations on Electricity—I. Bernard Cohen—*Harvard Univ. Press,* 453 p., $4. Benjamin Franklin's little known book on electricity, one of the most popular scientific books of its time, which went through several editions but is now almost unobtainable, is here made available to the modern reader. An introduction, an account of the previous state of electrical knowledge and of Franklin's own contributions, has been supplied by the editor. Other letters of Franklin to the Royal Society, papers and material not included in the earlier editions nor in the latest edition of Franklin's Works, have also been included.

Science News Letter, October 18, 1941

ANTHROPOLOGY

GESTURE AND ENVIRONMENT — David Efron—*King's Crown Press, Morningside Heights, New York, N. Y.,* 185 p., $2.25. See page 243.

Science News Letter, October 18, 1941

MATHEMATICS

COLLEGE ALGEBRA (2d ed.) — H. P. Pettit and P. Luteyn — *Wiley,* 247 p., $1.90. This second edition has been largely rewritten and new chapters have been added on probability and the method of finite differences. The problems are almost completely changed.

Science News Letter, October 18, 1941

CHEMISTRY

pH AND ELECTRO TITRATIONS (2d rev. ed.)—I. M. Kolthoff and H. A. Laitinen —*Wiley,* 190 p., diagrams, $3. In this edition a fourth part, "Voltammetry (Polarography) and Amperometric Titrations," has been added to the three parts of the original edition. These three parts, however, have been thoroughly revised and brought up to date.

Science News Letter, October 18, 1941

ETHNOLOGY

THE FOLK CULTURE OF YUCATAN — Robert Redfield—*University of Chicago Press,* 416 p., $3.50. A study of culture transitions in four progressively advanced communities, from tribal village to city. Presented as a book "for reading" and also as a report for presenting facts, Dr. Redfield's account of his findings is very enlightening on the subject of how civilization comes to primitive people.

Science News Letter, October 18, 1941